

Airline Wheelchair

Some 700,000 people in the United States rely on wheelchairs for mobility. Few of them travel by air because of difficulties encountered at airports, in boarding airliners, and particularly in mobility within the airplane. For several years, the Rehabilitation International Commission and its American affiliate—Rehabilitation International U.S.A. (RIUSA)—have been studying the matter and seeking to remove air travel barriers for the mobility impaired. A multi-organizational cooperative program has provided a major first step: a wheelchair capable of passage through narrow airliner aisles to move passengers to their seats and to give them access to lavatories. Participants include RIUSA, the designers and producers of several prototype chairs, a number of domestic and foreign airlines, and Aerospace Industries Association, representing the three major U.S. jetliner manufacturers (Boeing, Lockheed and McDonnell Douglas). The prototype chairs have been undergoing evaluation aboard commercial airlines since mid-year 1981. Each participating airline will select its own design from among the prototypes. The wheelchairs are expected to enter airline service next year.

Pictured at right is one of the prototypes, which incorporates NASA technology. The chair was designed by the University of Virginia (UVa) Rehabilitation Engineering Center with support from the National Institute of Handicapped Research and from Langley Research Center, which applied aerospace technologies in structural analysis and materials engineering. NASA's Research Triangle Institute Biomedical Applications Team, Research Triangle Park, North Carolina



coordinated the UVa/Langley teamwork. The UVa/Langley chair was the first of the competing prototypes to be ordered by an airline; United Air Lines contracted for 15 units, to be built by Accutron Tool and Instrument Company, Hampton, Virginia.

Since weight is a factor in any item of equipment aboard a commercial airliner, the wheelchair had to be much lighter than conventional wheelchairs; it also had to be stable, durable, comfortable and easy to handle. The UVa/Langley prototype is made of Langley-furnished composite materials and weighs only 17 pounds, about one-third the weight of a standard wheelchair. It fits airliner aisles (below) and can support a 200-pound person. Called the "Stowaway," it can be folded and stowed when not in use (left).

